REMARKS

The Applicant has been prompted to give further review of references cited by the Examiner in his Office Action of October 9, 2003, specifically Japan '334 and Japan '161. Based upon this review, the Applicant is, with this supplemental response, submitting new claims 28 through 45.

In the October 9, 2003 Office Action, the Examiner stated "Japan '334 (now the primary reference) expressly teaches using a polyethylene teraphthalate (polyester) containing carbon black."

The Examiner also correctly noted "Japan'334 does not appear to recite embedding the electrically conductive nonmetallic fibers in the expandable body." It is understood that the Examiner concurs that there is no art teaching the embedding non-metallic *fibers of electrically conductive material* in an expandable bladder. It is further understood that the Examiner concurs that Japan '334, the primary reference, teaches use of crimped fibers (i.e., fibers that are either woven or braided) that are coated or painted a with compound containing carbon black to provide electrical conductivity and said treated fibers are affixed to a surface as an electrically conductive circuit for resistive heating.

The text of Japan '334 states in part:

> "In the above device, the expandable body that generates heat when energized is a fabric body woven with crimped threads. It is permissible to structure an air-tight layer that is made of rubber or an expandable resin on the inner surface of this fabric body and to have a paint that generates heat when energized applied to or impregnated in said fabric body.
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> "An example of the paint that generates heat when energized is one obtained by admixing 50~60 parts of graft-polymerized acetylene black to an urethane resin, which will be the medium resin, by kneading the mixture, and by then dissolving it in methylethylketone.

"This heat-generating paint may be applied to the surface of the fabric body by using a brush or may be sprayed onto it by means of a gun. *Note, however, that the homogenization of the application needs much caution since the heat becomes locally excessive or insufficient unless it is homogenous over the entire surface.*

"Next, as far the means of impregnation, the fabric body may be directly immersed in the heat-generating paint or the fabric body may be woven by using threads that have been immersed."

"This fabric body must have expandability, and for this, crimped threads may be utilized as mentioned earlier, or expandability may be provided to the fabric body by weaving threads.

"Next, as the means for allowing the expandable body to generate heat, a method in which a heat-generating paint is applied to or impregnated in the baric body as mentioned earlier and a method in which the fabric body is made by knitting or weaving threads which themselves generate heat are conceivable.

"Examples of such heat –generating threads are ones that are obtained by inserting carbon-type heat-generating bodies into the cores of expandable resin threads, organic fiber yarns containing conductive particles, etc." (Emphasis supplied.)

The Examiner states with reference to Japan '161 that it would be obvious to a person skilled in the art to place fibers coated with electrically conductive carbon black into an expandable material. It is the position of the Applicant that Japan '161 provides no reference to what constitutes the heating element within the expanding tube.

Further, and perhaps most important, the Applicant's invention specifically claims use of *non metallic electrically conductive fibers* within an expandable matrix as a

reliable and durable source of resistive heating over multiple cycles. The Applicant's invention teaches the advantages of use of conductive fibers in this type of application in contrast to electrically conductive metal wires *or other materials*.

The Applicant states in the Background to the Invention that:

> "Inflatable bladders that incorporate various heating means have also been used for curing materials impregnated with a thermosetting resin matrix, such as polyester or epoxy based resins. In these resin types, certain chemicals are present that have a detrimental effect on silicone products. Specifically silicones, when exposed to certain chemicals such as styrene, which is present in many resin systems, and heat, will revert after a limited number of uses to into a weak form no longer suitable as an inflation device."
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> ...
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> "*In view of the aforementioned shortcomings associated with the conventional methods of construction and use of flexible, inflatable heaters, there is a strong need for a inflatable heating device containing a heating mechanism that is robust. There is also a strong need for materials that can withstand repeated use in aggressive environments and afford a long life cycle.* It will be appreciated that there is also a strong need for an improvement in manufacturing which can reduce production cycle time and capital equipment costs." (Emphasis supplied.)

Although copper wires, non metal fibers coated with an electrically conductive paint or otherwise treated with compounds that contain electrically conductive components, may have conductive properties similar to the *fibers of conductive material* as taught by the Applicant, the metal wires, coated fibers or broad references to other "conceivable" variations, do not provide or suggest with *any* expectation of success the reliable and robust properties taught by the Applicant's invention. Reference is made to

Hodash V. Block Drug Co. Inc., 786 F.2d 136 n.5, 229 USPQ 182, 187 n. 5 (Fed. Cir. 1986, as incorporated into Section 2141 of the MPEP.

It is the Applicant's further position that the primary reference cited by the Examiner at most, discloses use of non electrically conductive fibers that are treated via coating or infusion with electrically conductive material and that are consolidated through weaving, braiding or other process termed in the textile industry as a crimped fiber. Although this may produce a material that initially has comparable conductivity to the fibers of electrically conductive material taught by the Applicant, such non-conductive fibers will not have comparable properties and will be subject to early failure or incompatibility to the expanding matrix.

SUMMARY

The Applicant has reconsidered the art cited by the Examiner and provided additional claims that the Applicant believes to be consistent with the Examiner's position. These additional claims, 28 through 52 are offered in an effort to move some portion of the application to allowance and without waiver of the Applicant's position regarding the invention as defined in claims 1-6, 12-22. Please note that new claims 26 and 27 were included in the Response to Office Action entered June 7, 2004. The additional fees associated with the submission of new claims 26 and 27 has already been paid. The Applicant has also enclosed payment of $483.00 as the result of having added six independent and 19 dependent claims. By this payment and submission of the supplemental claims to its April 9, 2004 Response to the Office Action, the Applicant believes its Response is now in order for review by the Examiner. Such action is respectfully requested.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I hereby certify that this correspondence is being deposited on August 6, 2004 with the Untied States Postal Service, postage prepaid, as Express Mail - Post Office to Addressee, in an envelope addressed to the Mail Stop Amendments, Commissioner of Patents, P.O. Box 1450, Alexandria, Virginia, 22213-1450, Mailing Label No. ER769522164US.

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